LT EN RU

GSM AUTOMATINIŲ VARTŲ VALDIKLIS

GSM GATE CONTROLLER · GSM КОНТРОЛЛЕР АВТОМАТИЧЕСКИХ ВОРОТ ESIM010

ELDES **ESIM010**

User Manual v1.2

Safety instructions

Please read and follow these safety guidelines in order to maintain safety of operators and people around:

- GSM Gate Controller ESIM010 (later referenced as system) contains a radio transceiver operating in GSM900 and GSM1800 bands
- Don't use the system in hazardous environment
- Don't use the system where it can interfere with other devices and cause any potential danger
- Don't use the system with medical devices
- Don't use the system in hazardous environment
- Don't expose the system to high humidity, chemical environment or mechanical impacts
- Don't attempt to personally repair the system

Any system repairs must be done only by qualified, safety aware personnel

The system must be powered by external DC 15VA power supply which must be approved by LST EN 60950-1 standard.

Any additional device connected to the ESIM010 system must be powered up by a LST EN60950-1 approved supply.

External power supply can be connected to AC mains only inside installation room with automatic 2-pole circuit breaker capable of disconnecting circuit in the event of short circuit or over-current condition. Open circuit breaker must have a gap between connections of more than 3mm.

Mains power must be disconnected before any installation or tuning work starts. The system installation or maintenance must not be done during stormy conditions.

Fuse F1 type - C1S 2.5A. Blown fuse cannot be replaced by the user and the replacement fuses have to be exactly the same as indicated by the manufacturer.

The WEEE (Waste Electrical and Electronic Equipment) marking on this product (see left) or its documentation indicates that in the EU the product must not be disposed of together with household waste.

Copyright © "ELDES UAB", 2009. All rights reserved

It is not allowed to copy and distribute information in this document or pass to a third party without advanced written authorization by "ELDES UAB"
"ELSDES UAB" reserves the right to update or modify this document and/or related products without a warning. Hereby, ELDES UAB declares that this GSM Gate Controller is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC. The declaration of conformity may be consulted at www.eldes.lt/ce

Limited Liability

The buyer must agree that the system will reduce the risk of fire, theft, burglary or other dangers but does not guarantee against such events.

"ELDES UAB" will not take any responsibility regarding personal, property or revenue loss while using the system.

"ELDES UAB" responsibility according to local laws does not exceed value of the purchased system.

"ELDES UAB" is not affiliated with GSM operators providing cellular services therefore is not responsible for the quality of cellular services.

Manufacturer Warranty

The system carries a 24-month warranty by the manufacturer "ELDES UAB".

Warranty period starts from the day the system has been purchased by the end user. The warranty is valid only if the system has been used as intended, following all guidelines listed in the manual and within specified operating conditions. Receipt with purchase date must be kept as a proof.

The warranty is voided if the system has been exposed to mechanical impacts, chemicals, high humidity, fluids, corrosive and hazardous environment or other force majeure factors.

Content:

1. The system ESIM010 .....1pcs
2. ESIM010 user manual.....1pcs
3. GSM antenna.....1pcs

CONTENT

1. General Information

1.1 Function.....14
1.2 Operation Description.....14
1.3 Technical Specifications.....14
1.4 Connector and LED Indicators Functionality.....15
1.5 Connection Circuit.....15
1.6 System Installation.....15

2. System Pre-operation and the Main Control Commands

2.1 Selecting device language and verification of SMS central number.....16
2.2 Administrator Password Change.....16
2.3 Administrator Numbers.....17
2.3.1 Saving or Changing Administrator Numbers.....17
2.3.2 Verification of Administrator Numbers.....17
2.3.3 Deletion of Administrator Numbers.....17
2.4 User numbers.....17
2.4.1 Saving User Numbers 17
2.4.2 Verification of User Numbers.....18
2.4.3 Deletion of User Numbers.....18
2.5 Configuring Output Impulse Duration of User Numbers 18
2.6 Info on Status SMS (Network Signal Strength, Free Memory Space).....18
2.7 Sending Messages from Any Phone Number.....19
2.8 Input status 19
2.9 Changing input names.....19
2.10 Input arming/disarming.....19
2.11 Configuring input impulse duration.....20

3. Appendix

3.1 Restoring Default Parameters.....21
3.2 ESIM010 ConfigTool configuration software.....21
3.3 Technical Support.....21

About User Manual

This document describes GSM Gate Controller ESIM010, its operation and installation.

It is very important to read User Manual before start using the system. A quick start guide is located in first two chapters. Chapter 3 describes additional system capabilities.

1. General Information

1.1 Function

ESIM010 is a microcontroller based device used to control gate automatics, road barriers or to remotely turn on the electronic device over GSM network.

Examples of using the system:

- Controlling road barriers in the yards of blocks of flats or offices
- Opening personal house gates
- Turning on an electronic device for a specified period.
  E. g., aquarium lighting, turning on the pump, watering, controlling heating in premises etc.
- Turning on the system
- Turning on any electric device controlled with using ON/OFF function
- Rebooting "frozen" system, e. g., computer network or server.
- Notification about a fault in gate or other automatics device.

1.2 Operation Description

Automatic gate controller system ESIM010 works over GSM network. Gates are opened or any other electronic appliance is turned on by a free phone call. The phone is automatically rejected.

On calling to the phone number of the system it checks whether the caller is recorded in the database. If he/she is saved in the system, the relay is turned on for a specified period. The system will ignore requests incoming from an unknown telephone number or an SMS message with a wrong password.

Connecting open gates sensor or switch allows administrators receiving SMS message about the gates that did not close during the preset period, for instance, if the gates or road barrier did not close during the particular time period.

1.3 Technical Specifications

Electrical, mechanical and other specifications

Supply voltage	10-24V ~ 200mA max or 10-24V DC ⎓ 200mA max
Current used in standby model	not more than 50mA
GSM modem frequency	900/1800 Mhz
Number of outputs	1
Output type	NO (relay)
Number of "low" level (negative) inputs	2
Number of "high" level (positive) inputs	1
Allowable "low" level (negative) input voltage values	0-1.6V
Allowable "high" level (positive) input voltage values	5-50V
C1 output maximum commutating values	1A/24V DC; 0,5A/125V AC
Dimensions	70x85x57mm
Operating temperature range	-20…+55°C (-30...+55°C with limitations)
Number of administrators	5
Number of users	500

1.4 Connector and LED Indicators Functionality

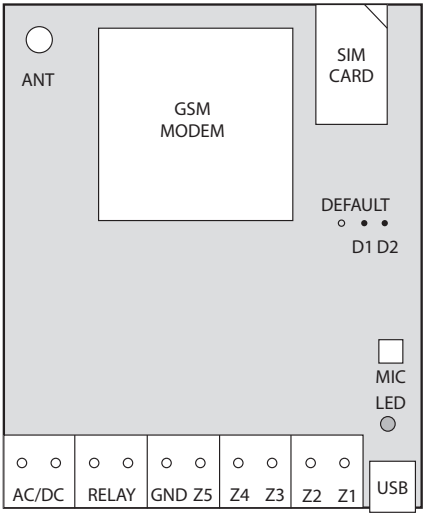


Fig. No 1

Short explanation of the main units

GSM MODEM	GSM network 900/1800MHz modem
SIM CARD	SIM card
LED	Light-emitting diodes indicator
DEFAULT	Connectors (D1 and D2) for restoring default settings
ANT	GSM antenna SMA type connector
USB	Mini USB connector

Connector functionality

Labeling	Explanation
AC/DC	Power supply pins
RELAY	Galvanically unbound relay connector. Normally open (NO)
RELAY	Galvanically unbound relay connector. Normally open (NO)
GND	Earth pin
Z3	"Low" level input Z3
Z2	"High" level input Z2
Z1	"Low" level input Z1

1.5 Connection Circuit

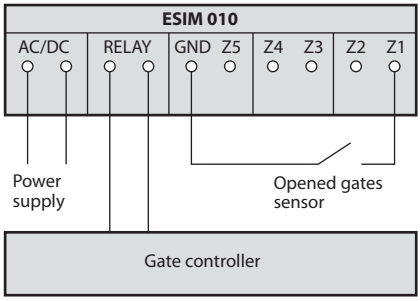


Fig. No 2

NOTE

Although the installation of system ESIM010 is not complex, we highly recommend installing the device only in the case if you have minimal electrotechnical or electronics knowledge. Otherwise you can damage the device.

1.6 System Installation

1. Place SIM card in the holder but make sure that SIM card PIN code is disabled (PIN code can be disabled by putting SIM card into mobile phone and following proper menus). SIM card should not have any remaining SMS messages.
2. Connect the circuit as shown in fig. No 2. Connect control connectors of the gate automatics device to the relay contacts. The systems that are already installed most often contain a button for opening the gates. The relay can be connected instead of the button or in parallel with its contacts.
3. Connect a sensor or switch to inputs Z1-Z3 that turns on only when gates are lifted. Low level signal is connected to Z1 and Z3. High level signal is connected to Z2. (Input connection is an additional function and it is not necessary to install).
4. The system will start in less than a minute. LED indicator should be blinking every five seconds indicating connection to GSM network. If the indicator is blinking very frequently, i. e. several times per second, it is possible that SIM card can is inserted incorrectly or PIN code request is not disabled.

2. System Pre-operation and the Main Control Commands

VERY IMPORTANT!!!

Underscore symbol '_' in this manual is used to represent space. When writing SMS messages, every underscore symbol should be replaced by single space symbol. XXXX – means password. Don't leave any space at the beginning and the end of the message.

To set ESIM010 system parameters easier and quicker you can use the computer, USB cable and configuration program ESIM010 ConfigTool. You can read more in chapter 3.2.

2.1 Selecting device language and verification of SMS central number

The language in which the device communicates with the user can be chosen before changing factory default password. To change the language in the system that is already configured reset default settings as described in 3.1 appendix.

Send SMS message with the required language code to the number of the SIM card inserted in ESIM010.

E.g., if you want to set the English language send the following SMS message: EN

30-60 seconds later you should get an SMS message: „English language confirmed." Go to chapter 2.2 upon reception of this message.

Table of possible languages

Language	Code
lithuanian	LT
english	EN
russian	RU

Otherwise check for network connection and call ESIM010 system from your mobile and wait until the system drops the call. You should get an SMS message asking to change default password. Ot- herwise check for network connection and change SMS central number.

SMS central number is saved in SIM card, therefore if SIM card has been used to send SMS messages with a mobile phone, then you don't' need to change SMS central number. Often SMS central number is already saved in SIM card by cellular operator.

Central number can be entered by sending SMS message:

```
XXXX_SMS_+37011111111
```

XXXX – is a password. Default password is four zeros: 0000. SMS central number is provided by cellular network provider.

Example: 0000_SMS_+37069899992

Message should be sent to the number of SIM card which is placed into the system. If all went correct, the system will send a message: *SMS central number has been successfully changed to +37011111111*

2.2 Administrator Password Change

All SMS commands start with a password, please memorize it. Manufacturer default password is four zeros 0000, which is necessary to change! Manufacturer default password can be changed by sending the following SMS message to ELDES ESIM010 system:

```
0000_PSW_XXXX
```

To replace your password send the following SMS message:

```
YYYY_PSW_XXXX
```

XXXX is any four digit number except four zeros. Non-numerical characters like dots, colons, spaces are not allowed. YYYY is the old system password. If you forgot the password, default manufacturer password can be restored, see chapter 3.1 for more details.

2.3 Administrator Numbers

The system ESIM010 allows to pre-program up to five different mobile numbers which will have access to and control the system. NR1 is mandatory while others can be skipped. All numbers must be entered starting with international country code, e. g. national code for Lithuania is 370, UK- 44. The plus sign is not necessary. Numbers without the international code are not allowed.

2.3.1 Saving or Changing Administrator Numbers

Send SMS message with the following text:

```
XXXX_NR1:37011111111_NR2:37011111111_NR3:37011111111_NR4:37011111111_NR5:37011111111
```

Ones should be replaced with administrator numbers. Numbers don't have to be entered in sequential order right away. E. g. use can enter first and fourth number by sending the following SMS message:

```
XXXX_NR1:37011111111_NR4:37011111111
```

Or individually one number at a time:

```
XXXX_NR3:37011111111
```

Numbers can be changed same way as described above. New number will overwrite old one, therefore no erasing is necessary.

2.3.2 Verification of Administrator Numbers

To inquire the system about pre-programmed administrator numbers send the following SMS message:

```
XXXX_HELPNR
```

The system will reply with all pre-programmed numbers.

2.3.3 Deletion of Administrator Numbers

To erase a particular or several administrator numbers send an SMS message with the numbers to be deleted:

```
XXXX_NR2:DEL_NR3:DEL_NR4:DEL_NR5:DEL
```

E. g. XXXX_NR3:DEL

The system will not allow erasing first number NR1. It can only be modified.

2.4 User Numbers

The system ESIM010 allows to pre-program up to 500 different mobile numbers which will have access to controlling the gates by a phone call. The gates can also be controlled by administrators. **All numbers must be entered starting with international country code, e. g. national code for Lithuania is 370.** The plus sign is not necessary. Numbers without the international code, e. g., 8698..., are not allowed. The numbers can be recorded or deleted only by administrator.

2.4.1 Saving User Numbers

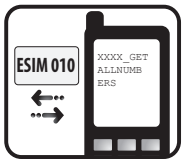
Send SMS message with the following text:

```
XXXX_N:37011111111_37011111111_370.........
```

Ones should be replaced with user numbers. Up to 10 numbers can be entered sending an SMS message. To enter more numbers, send another analogous SMS message. The ten numbers don't have to be entered in sequential order right away. E. g. use can enter only one number. After saving 500 user numbers you will be able to enter new users after you have deleted the users not using the system thus emptying memory space

2.4.2 Verification of User Numbers

To learn if a particular user number is programmed in the system send the following SMS message:




```
XXXX_T:37011111111
```

Ones should be replaced with the number which you want to check if it is entered in the system.

To see all numbers entered send the following SMS message:

```
XXXX_GETALLNUMBERS
```

ATTENTION!

Depending on entered user numbers you might receive up to 55 SMS messages!

2.4.3 Deletion of User Numbers

To delete a particular or several user numbers send an SMS message with the numbers to be deleted:

```
XXXX_D:37011111111_37011111111_370.........
```

Ones should be replaced with user numbers. Up to 10 numbers can be deleted sending an SMS message. To enter more numbers, send another analogous SMS message. The numbers don't have to be deleted in sequential order right away. E. g. use can delete only one number.

To delete all numbers except administrators send the following SMS message:

```
XXXX_D:ALL
```

2.5 Configuring Output Impulse Duration of User Numbers

NOTE

The manufacturer set that after the user's call relay connectors are connected for 2 seconds (impulse duration).

To change the duration of switching on the relay end the following SMS message:

```
XXXX_TIMER:t
```

where t means the time of turning on the relay in seconds. Possible t values are [1-10]. Quantization is by 1.

E. g. XXXX_TIMER:10 means that relay contacts will be connected for 10 seconds. After 10 seconds the relay will be turned off and the contact will be open, i. e. NO.

2.6 Info on Status SMS (Network Signal Strength, Free Memory Space)

The system ESIM010 can any time be inquired about GSM signal strength and free memory space for entering user numbers. Send the following SMS message:

```
XXXX_INFO
```

2.7 Sending Messages from Any Phone Number

The system is set so that the relay of the unit can be controlled only by the users entered on the system. However, it is possible turning on a special mode the relay can be turned on by any caller calling to the SIM card number of the device.

To turn on this mode send the following SMS message:

```
XXXX_ALLNUM:ON
```

To turn off controlling from any phone send the following SMS message:

```
XXXX_ALLNUM:OFF
```

2.8 Input Status

To find out current input names and their settings send the following SMS message:

```
XXXX_STATUS
```

You will receive the answer, e. g.: *Z1:Zone1:ON/OFF T1:600 Z2:Zone2:ON/OFF T2:600 Z3:Zone3:ON/OFF T3:600*

T1, T2 and T3 – delay of particular input in milliseconds, i. e. a period during which the input starts reacting to signal change. For instance, the alarm will be triggered just in the case when voltage (signal) is supplied for at least 600ms.

2.9 Changing input names

Input names set by the manufacturer: Z1- Zone1, Z2-Zone2, Z3-Zone3. Any of these names can be changed by the user. The names cannot repeat or coincide with control commands.

Input names can be changed by sending the following SMS message:

```
XXXX_Z1:NewInputName_Z2:NewInputName_
Z3:NewInputName
```

The user can change all names at once, several names or only one name. Maximum input name length is 8 characters.

E. g. XXXX_Z2:OpenGate

2.10 Input arming/disarming

Input arming

Any of the inputs can be armed by sending the following SMS message:

```
XXXX_Z1:ON_Z2:ON_Z3:ON
```

E. g. XXXX_Z2:ON or XXXX_doors:ON

Input disarming

Any of the inputs can be disarmed by sending the following SMS message:

```
XXXX_Z1:OFF_Z2:OFF_Z3:OFF
```

E. g. XXXX_Z2:OFF or XXXX_doors:OFF

2.11 Configuring input impulse duration

Impulse duration can be changed for any IN1-IN3 input. The input is triggered only if impulse duration is longer than the pre-set value. Duration set by the manufacturer is 600ms.

This parameter can be changed for every input or for all inputs at once by sending the following SMS message:

```
XXXX_T1:TT_T2:TT_T3:TT
```

where TT means input reaction time in milliseconds. Possible TT values are 100-42000000. Measuring is by 100.

E. g. XXXX_T3:300000 means that IN3 input will react only if the impulse was not shorter than 5mins.

3. Appendix

3.1 Restoring Default Parameters

To restore default parameters:

1. disconnect power supply
2. short circuit (connect) connectors D1 and D2
3. connect power supply for 5 seconds
4. disconnect power supply
5. disconnect connectors D1 and D2

3.2 ESIM010 ConfigTool configuration software

To configure the system quicker and easier as well as use more system capabilities use configura- tion program „ESIM010 Config-Tool" which can be downloaded from our website www.eldes.lt

Before connecting USB cable to the computer read ESIM010 ConfigTool user guide available in the program chapter HELP.

3.3 Technical Support

Indication	Possible reason
Indicator is off or not blinking	• no external power supply • circuit not properly connected • blown fuse • no network signal
Indicator blinking several times per second	• SIM card is not inserted • PIN code hasn't been disabled • Sim card not active
System does not send any SMS messages	• SIM card account depleted • incorrect SIM central number • no network signal • user number is not programmed in user list
Received SMS message "Incorrect Format"	• incorrect syntax • extra space symbol left in SMS message

If your problem could not be fixed by the self-guide above, please contact your distributor or ELDES tech support by email support@eldes.lt

More up to date information about your device and other products can be found at the manufacturer's website www.eldes.lt